## REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1, 2, and 4-13 are presently pending in this case, Claims 5-13 having been withdrawn from further consideration, original Claim 3 having been cancelled by the present amendment, and Claims 1 and 2 having been amended by the present amendment. Amended Claims 1 and 2 are supported by the specification.[1] Amended Claims 1 and 2 add no new matter.

The outstanding Official Action rejected Claims 1-4 under 35 U.S.C. §112, first paragraph, for failing to comply with the enablement requirement. Claim 1-4 were rejected under 35 U.S.C. §112, second paragraph, as indefinite for failing to particularly point put and distinctly claim the subject matter which the applicant regards as the invention. Claims 1-3 were rejected under 35 U.S.C. §103(a) as being unpatentable over either Nagase et al. (U.S. Patent No. 4,894,202, hereinafter "Nagase '202") or Nishino et al. (U.S. Patent No. 4,927,598, hereinafter "Nishino") in view of Nagase et al. (U.S. Patent No. 5,398,269, hereinafter "Nagase '269"). Claim 4 was rejected under 35 U.S.C. §103(a) as being unpatentable over either Nagase '202 or Nishino in view of Nagase '269 and further in view of Honda et al. (U.S. Patent No. 4,828,790, hereinafter "Honda").

Claim 3 has been cancelled, making the present rejections on the merits moot with respect to Claim 3. To the extent that the present rejections apply to the amended Claims 1 and 2, Applicant respectfully traverses the rejections.

Turning now to the rejection under 35 U.S.C. §112, first paragraph, amended Claim 1 recites, "applying an atmospheric oxidation heating treatment to nickel base alloy material which is used in a feed water heater and a fuel assembly of the nuclear reactor thereby to

[1] See specification at page 15, lines 9-18 and page 19, lines 12-15.

form an oxide layer on the surface of the nickel base alloy material, so that a nickel concentration in the reactor water is maintained so as to be less than 0.2 ppb." The specification at page 19, lines 12-15 teaches an exemplary method of atmospheric oxidation heating treatment of austenitic stainless steel that can be used in practicing the present invention. The specification further discloses on page 19, lines 21-29 that the atmospheric oxidation heating treatment forms an oxide layer on the surface of the treated parts, reducing the corrosive velocity. Thus, Applicant respectfully submits there is adequate support in the specification for the above quoted "applying" step.

The outstanding Office Action states that the term "atmospheric oxidation" implies being exposed to air, and that there is neither an adequate description nor enabling disclosure as to how and in what manner said oxidation treatment could be performed when the feed water heater and fuel assembly are in the reactor. The outstanding Office Action notes that the preamble of Claim 1 implies that the reactor is already completed or operational, and that cooling water quality is being controlled. Applicant respectfully disagrees.

In response, it is noted that the "atmospheric oxidation heating treatment" recited in Claim 1 has support in the specification at page 19, lines 12-15, and that one skilled in the art would know several means to practice the invention recited in Claim 1.

Indeed, it is respectfully submitted that one skilled in the art would realize that the method recited in Claim 1 may be practiced from the construction stages of a nuclear reactor, or in retrofitting a present reactor that is taken off line. Applicant respectfully submits that one skilled in the art would know that nickel base alloy parts could undergo an atmospheric oxidation heating treatment as the nickel base alloy parts are manufactured, before the nickel base alloy parts are installed into a new reactor or replace non-treated nickel base alloy parts in a presently existing off line reactor.

Further, Applicant respectfully submits that one skilled in the art would know that nickel base alloy parts could undergo atmospheric oxidation heating treatment by pumping high temperature air (for example the process disclosed on page 19, lines 12-15) through the assembled nickel base alloy parts before the reactor is brought on line, in either a new or off line reactor.

Applicant respectfully submits that one skilled in the art would also know that high temperature air could be applied to nickel base alloy parts before installation in a new or off line reactor, after the nickel base alloy parts have been manufactured.

Finally, Applicant respectfully submits that one skilled in the art would know that the disclosed atmospheric oxidation heating treatment could be applied to nickel base alloy parts taken out of an off line reactor, and then the treated parts could be reinstalled to practice the invention with an existing reactor.

Thus, given Applicant's specification at page 19, lines 12-15, and the knowledge of a person skilled in the art as above discussed, it is respectfully submitted that Applicant's description is enabling for applying an atmospheric oxidation heating treatment to nickel base alloy material, as recited in Claim 1.

The outstanding Office Action further states that there is neither an adequate description nor enabling disclosure as to how and in what manner the cited nickel concentration in the reactor water can be maintained only by atmospheric oxidation treatment of the nickel base alloy materials in the reactor components. Applicant respectfully submits that this is disclosed by the present specification from page 14, line 10 to page 15, line 18 and on page 19, lines 3-11. Applicant has found that the main sources of nickel are stainless steel of the heat exchange tubes of the high-pressure supply water heater and the Ni-base alloy of the fuel assembly loaded in the nuclear reactor (page 19, lines 5-8). In fact, Applicant teaches on page 14, line 28 an equation that can be used to calculate the total amount of

nickel generated in the form of concentration value converted into the supply water. Thus, Applicant has discovered the source of a problem, i.e. the main sources of nickel are the nickel based alloy material used in the feed water heater and the fuel assembly, and provides in the claimed invention the solution of controlling the nickel eluted from this material.

In view of these foregoing comments, Applicant submits Claims 1, 2, and 4 are in full compliance with all requirements under 35 U.S.C. § 112, first paragraph.

In response to the 35 U.S.C. §112, second paragraph, rejection, Claim 1 has been amended to clarify the claimed invention. Accordingly, Applicant respectfully submits Claims 1, 2, and 4 are in full compliance with all requirements under 35 U.S.C. § 112, second paragraph.

Turning to the rejection of Claim 1 under 35 U.S.C. §103(a), amended Claim 1 further recites, "reducing and limiting the amount of nickel in system water supplied into the nuclear reactor to up to 1/4.4 so that that a total amount of iron generated is at least twice as much as a total amount of nickel generated."

Nagase '202 discloses a method of inhibiting radioactive substances from eluting into cooling water wherein the iron/nickel ratio is from 2 to 10. There is no teaching or suggestion to limit the amount of nickel carried from the supply water into the nuclear reactor to up to 1/4.4, as recited in Claim 1.

Nishino discloses a radioactivity reduction method for a nuclear power plant wherein a beryllium alloy is introduced into the cooling water to act as a catalyst for converting nickel to nickel ferrite and converting cobalt to cobalt ferrite. There is no teaching or suggestion to limit the amount of nickel carried from the supply water into the nuclear reactor to up to 1/4.4, as recited in Claim 1.

Nagase '269 discloses a water quality control method wherein the iron removal rate of a condensed water purifying loop is increased while the pH of the reactor water is maintained

below 6.8. Again, there is no teaching or suggestion to limit the amount of nickel carried from the supply water into the nuclear reactor to up to 1/4.4, as recited in Claim 1.

Since the cited references do not teach or suggest all of the elements of Claim 1, Applicant respectfully submits that Claim 1 is patentable over the cited references.

With regard to the rejection of Claim 2 under 35 U.S.C. §103(a), amended Claim 2 recites, "reducing and limiting an amount of nickel generated from fuel springs up to 1/2."

None of Nagase '202, Nishino, or Nagase '269 teach or suggest this element. Since the cited references do not teach or suggest all of the elements of Claim 2, Applicant respectfully submits that Claim 2 is patentable over the cited references.

Claim 4 is dependent from Claim 1, with is believed to be patentable over the cited references. Accordingly, Applicant respectfully submits that Claim 4 is patentable over the cited references.

Accordingly, the outstanding rejections are traversed and the pending claims are believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

Eckhard H. Kuesters
Attorney of Record
Registration No. 28,870

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 08/03)
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